

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1 Claim 1 (currently amended): An electrical power
2 conversion system for a vehicle, comprising:
3 a load receiver for powering and controlling a vehicle
4 load-loads, said load receiver comprising:
5 a decoupler for decoupling a communication signal
6 from an vehicle DC electrical power bus, said
7 communication signal containing encoded load
8 information, wherein the decoupler electrically
9 isolates the communication signal from the
10 power bus signal;
11 a data receiver for receiving the communication
12 signal from the decoupler and deriving load
13 data therefrom;
14 a data decoder for decoding the load data received
15 from the data receiver and converting ~~it~~ the
16 load data to a converter signal according to
17 the encoded load information;
18 and a power converter for receiving the converter
19 signal from the data decoder for controlling an
20 operation of one or both of the converter and
21 the load, wherein the power converter converts
22 an electrical power bus input of a first
23 voltage into a power output at a second voltage
24 for powering the ~~loads~~ vehicle load.

1 Claim 2 (currently amended): An electrical power
2 conversion system according to claim 1, further comprising:
3 a load transmitter for transmitting encoded vehicle load
4 information in a transmitted communication signal

5 onto the electrical power bus, said load transmitter
6 comprising:
7 a data encoder for encoding the vehicle load
8 information into load data;
9 a data transmitter for receiving the load data from
10 the data encoder and generating and
11 transmitting [[a]] the communication signal;
12 and
13 a coupler for receiving the communication signal
14 from the data transmitter and coupling the
15 communication signal onto the vehicle DC
16 electrical power bus.

1 Claim 3 (currently amended): An electrical power
2 conversion system according to claim 1, wherein:
3 the load-information contains load state and load address
4 information; and further wherein
5 the power converter sets the state of the vehicle load
6 according to the converter signal when the power
7 converter is powering the vehicle load associated
8 with that load address.

1 Claim 4 (currently amended): An electrical power
2 conversion system according to claim 2, wherein
3 the load-information contains load state and load address
4 information; and further wherein
5 the power converter sets the state of the vehicle load
6 according to the converter signal when the power
7 converter is powering the vehicle load associated
8 with that load address.

1 Claim 5 (currently amended): An electrical power
2 conversion system according to claim 2 further comprising:

3 a data encoder for encoding return load information from
4 one or both of the power converter or and the load
5 into load data;
6 a load return transmitter for generating and transmitting
7 a return communication signal from the return load
8 data from the data encoder; and
9 a second coupler for coupling the return communication
10 signal data received from the load return
11 transmitter to the vehicle DC electric power bus.

1 Claim 6 (original): An electrical power conversion
2 system according to claim 5, wherein
3 the load information contains vehicle load state and load
4 address information; and further wherein
5 the power converter sets the state of the vehicle load
6 according to the converter signal when the power
7 converter is powering the vehicle load associated
8 with that load address.

1 Claim 7 (currently amended): An electrical power
2 conversion system according to claim 1 for powering vehicle
3 loads, wherein the first voltage is about thirty-six volts to
4 forty-two volts (36V-42V) and the second voltage is about
5 twelve volts to fourteen volts (12V-14V).

1 Claim 8 (currently amended): An electrical power
2 conversion system according to claim 2 for powering vehicle
3 loads, wherein the first voltage is about thirty-six volts to
4 forty-two volts (36V-42V) and the second voltage is about
5 twelve volts to fourteen volts (12V-14V).

1 Claim 9 (currently amended): An electrical power
2 conversion system according to claim 3 for powering vehicle
3 loads, wherein the first voltage is about thirty-six volts to
4 forty-two volts (36V-42V) and the second voltage is about

5 twelve volts to fourteen volts (12V~~10~~14V).

1 Claim 10 (currently amended): An electrical power
2 conversion system according to claim 4 for powering vehicle
3 loads, wherein the first voltage is about thirty-six volts to
4 forty-two volts (36V-42V) and the second voltage is about
5 twelve volts to fourteen volts (12V14V).

1 Claim 11 (currently amended): An electrical power
2 conversion system according to claim 5 for powering vehicle
3 loads, wherein the first voltage is about thirty-six volts to
4 forty-two volts (36V-42V) and the second voltage is about
5 twelve volts to fourteen volts (12V14V).

1 Claim 12 (currently amended): An electrical power
2 conversion system according to claim 6 for powering vehicle
3 loads, wherein the first voltage is about thirty-six volts to
4 forty-two volts (36V-42V) and the second voltage is about
5 twelve volts to fourteen volts (12V-14V).

1 Claim 13 (currently amended): An electrical power
2 conversion system for powering vehicle loads, comprising:
3 a load transmitter for transmitting encoded load
4 information in a communication signal onto a vehicle
5 electrical power bus operating at about thirty-six
6 volts to forty-two volts (36V-42V) DC, said load
7 transmitter comprising:
8 a data encoder for encoding load state and load
9 address information into encoded data;
10 a frequency shift keying transmitter for receiving
11 the encoded data from the data encoder and
12 transmitting the encoded data as an FSK
13 communication signal; and
14 a coupler for coupling the FSK communication signal
15 onto the vehicle electrical power bus;

16 and

17 a load receiver for controlling vehicle loads and
18 providing said vehicle loads with electrical
19 power at about twelve volts to fourteen volts
20 (12V-14V), said load receiver comprising:

21 a decoupler for decoupling the FSK
22 communication signal from ~~an~~ the vehicle
23 electrical power bus, said FSK
24 communication signal containing the
25 encoded load state and load address
26 information, wherein the decoupler
27 electrically isolates the FSK
28 communication signal from the power
29 signal;

30 a frequency shift keying receiver for receiving
31 the FSK communication signal from the
32 decoupler and deriving encoded data from
33 the FSK communication signal;

34 a data decoder for decoding the encoded data
35 received from the frequency shift keying
36 receiver and converting ~~it~~ the encoded
37 data into a converter signal according to
38 the decoded load state and load address
39 information; and

40 a power converter for converting the vehicle
41 electrical bus power signal of about
42 thirty-six volts to forty-two volts (36V-
43 42V) DC into a load power output
44 equivalent to about twelve volts to
45 fourteen volts (12V-14V) for powering
46 vehicle electrical loads, wherein the
47 power converter sets the state of [[a]]
48 the load in accordance with the converter
49 signal when the power converter is

50 powering [[a]] the load associated with
51 that load address.

1 Claim 14 (original): An electrical power conversion
2 system for a vehicle electrical system according to claim 13,
3 wherein the power converter contains a DC-to-DC converter.

1 Claim 15 (original): An electrical power conversion
2 system for a vehicle electrical system according to claim 13,
3 wherein the power converter contains a DC-to-AC inverter.

1 Claim 16 (currently amended): An electrical power
2 conversion system for powering vehicle loads, comprising:
3 a load transmitter for transmitting encoded load
4 information in a communication signal onto a vehicle
5 electrical power bus operating at about thirty-six
6 volts to forty-two volts (36V-42V) DC, said load
7 transmitter comprising:
8 a data encoder for encoding load state information
9 and load address information into encoded data;
10 and
11 a frequency shift keying transmitter for receiving
12 the encoded data from the data encoder and
13 transmitting the encoded data as an FSK
14 communication signal onto a vehicle
15 communication bus;
16 and
17 a load receiver for controlling vehicle loads and
18 providing said vehicle loads with electrical power
19 at about twelve volts to fourteen volts (12V-14V),
20 said load receiver comprising:
21 a frequency shift keying receiver for receiving the
22 communication signal from the vehicle

23 communication bus and deriving encoded data
24 from the FSK communication signal;
25 a data decoder for decoding the encoded data
26 received from the frequency shift keying
27 receiver and converting ~~it~~ the encoded data
28 into a converter signal according to the
29 decoded load state and load address
30 information; and
31 a power converter for converting the vehicle
32 electrical bus power signal of about thirty-six
33 volts to forty-two volts (36V-42V) DC into a
34 load power output equivalent to about twelve
35 volts to fourteen volts (12V-14V) for powering
36 vehicle electrical loads, wherein the power
37 converter sets the state of ~~[[a]]~~ the load in
38 accordance with the converter signal when the
39 power converter is powering ~~[[a]]~~ the load
40 associated with that load address.

1 Claim 17 (original): An electrical power conversion
2 system for a vehicle electrical system according to claim 16,
3 wherein the power converter contains a DC-to-DC converter.

1 Claim 18 (original): An electrical power conversion
2 system for a vehicle electrical system according to claim 16,
3 wherein the power converter contains a DC-to-AC inverter.

1 Claim 19 (currently amended): An electrical power
2 conversion system for a vehicle, comprising:
3 a power converter connected to ~~an~~ a vehicle electrical
4 power bus that provides DC current, said power
5 converter for converting the bus voltage into a load
6 voltage different from the bus voltage, said load
7 voltage for powering a vehicle load; and

8 a data receiver for receiving an encoded communication
9 signal from the electrical power bus, said encoded
10 communication signal including encoded load
11 information for controlling an operation of one or
12 both of said power converter and said vehicle load.

1 Claim 20 (currently amended): The electrical power
2 conversion system of claim 19, further comprising a data
3 decoder for decoding the encoded communication signal and
4 converting ~~it~~ said communication signal to a control signal
5 for said controlling an operation of one or both of said power
6 converter and said load, wherein said controlling is done
7 according to said load information.